Notice No. 5

Rules and Regulations for the Classification of Special Service Craft, July 2013

The status of this Rule set is amended as shown and is now to be read in conjunction with this and prior Notices. Any corrigenda included in the Notice are effective immediately.

Issue date: March 2014

Amendments to	Effective date
Part 1, Chapter 3, Section 9	Corrigendum
Part 1, Chapter 3, Section 11	1 March 2014
Part 1, Chapter 3, Section 11	Corrigendum
Part 1, Chapter 4, Section 8	Corrigendum
Part 1, Chapter 4, Section 10	1 March 2014
Part 1, Chapter 4, Section 10	Corrigendum
Part 3, Chapter 3, Section 3	Corrigenda
Part 6, Chapter 2, Section 4	Corrigenda
Part 6, Chapter 3, Section 10	Corrigendum
Part 6, Chapter 5, Sections 3 & 6	Corrigenda
Part 6, Chapter 6, Section 2	Corrigendum
Part 6, Chapter 7, Section 4	Corrigendum
Part 7, Chapter 2, Sections 3 & 4	Corrigenda
Part 9, Chapter 2, Sections 2 & 3	Corrigenda
Part 10, Chapter 1, Sections 2, 3, 9, 12 & 14	Corrigenda
Part 16, Chapter 1, Section 3	Corrigenda
Part 16, Chapter 2, Section 17	Corrigenda

Lloyd's Register

Working together
for a safer world

Part 1, Chapter 3

Periodical Survey Regulations for Service Craft

CORRIGENDUM

■ *Section 9*
Oil engines – Detailed requirements

9.1 Complete Surveys

9.1.2 The following parts are to be opened out and examined:

- Cylinders and covers.
- Valves and valve gear.
- Pistons and connecting rods.
- Crankshafts and all bearings.
- Crankcases and entablatures.
- Crankcase door fastenings and explosion relief devices.
- ~~Turbo chargers~~ Turbochargers and their associated coolers.
- Air compressors and their intercoolers.
- Filters and/or separators and safety devices.
- Fuel pumps and fittings.
- Camshaft drives and balancer units.
- Vibration dampers or detuners.
- Flexible couplings and clutches.
- Reverse gears.
- Attached pumps and cooling arrangements.

Effective date 1 March 2014

■ *Section 11*
Screwshafts, tube shafts, propellers and water jet units

11.2 Normal surveys

11.2.2 Directional propeller units are to be ~~dismantled for examination of~~ generally examined so far as possible, including the propellers, shafts, gearing ~~and control gear~~, controlgear and primary electrical components, inclusive of control and protection devices.

11.2.3 Water ~~Jet Units~~ jet units are to be ~~dismantled for examination of~~ generally examined so far as possible, including the impeller, casing, shaft, shaft seal, shaft bearing, inlet and outlet~~s~~ channels, steering nozzle, reversing arrangements, and ~~control gear~~ controlgear. On completion an operational test is to be be carried out.

11.2.4 Stationary supporting structure and any erosion protection inserts or doublers are to be examined in way of any propulsion devices.

CORRIGENDUM

11.3 Screwshaft Condition Monitoring (SCM)

(*Part only shown*)

11.3.3 Water lubricated bearings:

(h) There is to be a shaft starting/clutch engagement block to inhibit starting the shaft until lubricating water flow has been established. This is to only act as a starting block; low lubricating water flow after shaft start is to be alarm only with no ~~shut down~~ shutdown.

Part 1, Chapter 4

Periodical Survey Regulations for Yachts

CORRIGENDUM

■ *Section 8*
Oil engines – Detailed requirements

8.1 Complete Surveys

8.1.2 The following parts are to be opened out and examined:

- Cylinders and covers.
- Valves and valve gear.
- Pistons and connecting rods.
- Crankshafts and all bearings.
- Crankcases and entablatures.
- Crankcase door fastenings and explosion relief devices.
- ~~Turbo-chargers~~ Turbochargers and their associated coolers.
- Air compressors and their intercoolers.
- Filters and/or separators and safety devices.
- Fuel pumps and fittings.
- Camshaft drives and balancer units.
- Vibration dampers or detuners.
- Flexible couplings and clutches.
- Reverse gears.
- Attached pumps and cooling arrangements.

Effective date 1 March 2014

■ *Section 10*
Screwshafts, tube shafts, propellers and water jet units

10.2 Normal surveys

10.2.2 Directional propeller units are to be ~~dismantled for examination of~~ generally examined so far as possible, including the propellers, shafts, gearing ~~and control gear~~, controlgear and primary electrical components, inclusive of control and protection devices.

10.2.3 Water jet units are to be ~~dismantled for examination of~~ generally examined so far as possible, including the impeller, casing, shaft, shaft seal, shaft bearing, inlet and outlets channels, steering nozzle, reversing arrangements, and ~~control gear~~ controlgear. On completion an operational test is to be carried out.

10.2.4 Stationary supporting structure and any erosion protection inserts or doublers are to be examined in way of any propulsion devices.

CORRIGENDUM

10.3 Screwshaft Condition Monitoring (SCM)

(*Part only shown*)

10.3.3 Water lubricated bearings:

(h) There is to be a shaft starting/clutch engagement block to inhibit starting the shaft until lubricating water flow has been established. This is to only act as a starting block; low lubricating water flow after shaft start is to be alarm only with no ~~shut-down~~ shutdown.

Part 3, Chapter 3

Control Systems

CORRIGENDA

■ *Section 3*
Sternframes and appendages

3.6 Single arm shaft brackets ('P' – brackets)

3.6.1 Single arm shaft brackets are to have a section modulus, Z_{xx}, at the palm of not less than that determined from the formula:

$$Z_{xx} = \frac{a_s \cancel{d_t} d_{up}^2 f}{45000} \text{ cm}^3$$

where

a_s = the length of the arm to be measured from the centre of the section at the palm to the centreline of the shaft boss, in mm, *see* Fig. 3.3.6

$\cancel{d_t} d_{up}$ = the Rule diameter for an unprotected screwshaft, in mm, as given in Pt 11, Ch 2,4, using A = 1,0

f = $400/\sigma_u$

σ_u = ultimate tensile strength of arm material, in N/mm^2

The cross-sectional area of the bracket at the boss is to be not less than 60 per cent of the area of the bracket at the palm.

3.7 Double arm shaft brackets ('A' – brackets)

3.7.2 The arms of double arm shaft brackets are to have a section modulus, Z_{xx}, of not less than that determined from the formula:

Z_{xx} = 0,45 n^3 cm^3

where

n = the minimum thickness, in cm, of a hydrofoil section obtained from:

$$\cancel{n = d_t \sqrt{\left(\frac{f}{2000}\right)\left(1 + \sqrt{\left(1 + \left(\frac{0{,}0112}{f}\right)\left(\frac{a_d}{d_t}\right)^2\right)}\right)}} \text{ cm}$$

$$n = d_{up} \sqrt{\left(\frac{f}{2000}\right)\left(1 + \sqrt{\left(1 + \left(\frac{0{,}0112}{f}\right)\left(\frac{a_d}{d_{up}}\right)^2\right)}\right)} \text{ cm}$$

a_d = the length of the longer strut, in mm, *see* Fig. 3.3.7

$\cancel{d_t}$ d_{up} and f are as given in 3.6.1.

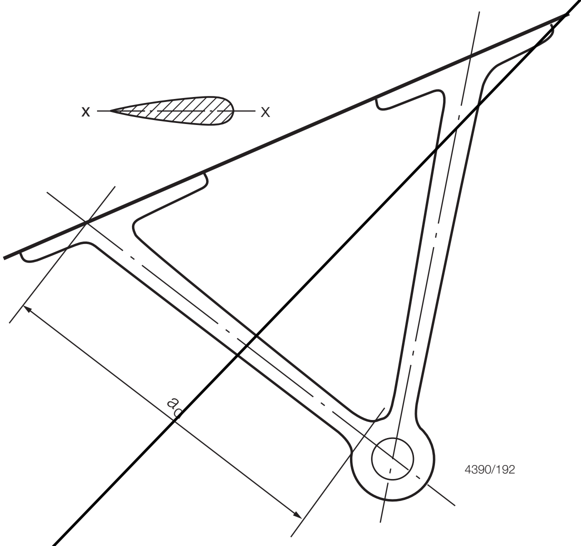


Fig. 3.3.7 Double arm shaft bracket

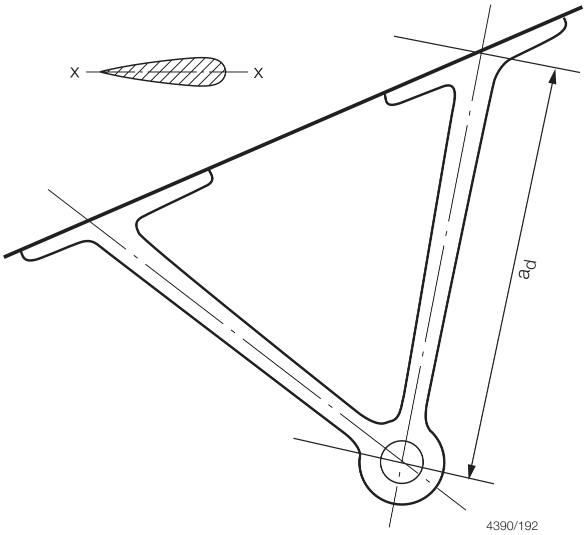


Fig. 3.3.7 Double arm shaft bracket

Part 6, Chapter 2

Construction Procedures

CORRIGENDA

■ *Section 4*
Joints and connections

4.5 Fillet welds

4.5.1 The throat thickness of fillet welds is to be determined from:

$$\text{Throat thickness} = t_p \text{ x weld factor x} \left(\frac{d}{s}\right) \text{ mm}$$

where

s = the length of correctly proportioned weld fillets, clear of end craters, in mm, and the fillet length is to be 10 × plate thickness or 40 mm, whichever is the greater, but need not exceed 75 mm.
d = the distance between successive weld fillet, in mm
t_p = plate thickness, in mm, on which weld fillet size is based, *see* ~~4.5.6~~ 4.5.4

Weld factors are contained in Table 2.4.1.

NOTE

For double continuous fillet welding $\left(\frac{d}{s}\right)$ is to be taken as 1, *see* ~~4.8.1~~ 4.7.1.

4.5.4 The plate thickness t_p to be used in ~~4.5.2~~ 4.5.1 is generally to be that of the thinner of the two parts being joined. Where the difference in thickness is considerable, the size of fillet weld will be specially considered.

4.7 Double continuous fillet welding

4.7.1 Where double continuous fillet welding is proposed the throat thickness is to be in accordance with ~~4.5.2~~ 4.5.1 taking $\left(\frac{d}{s}\right)$ equal to 1.

Part 6, Chapter 3

Scantling Determination for Mono-Hull Craft

CORRIGENDUM

■ *Section 10*
Pillars and pillar bulkheads

10.7 Scantlings determination

10.7.1 The cross-sectional area of the pillar, A_p, is not to be less than:

$$A_p = 10 \frac{P_p}{\sigma_p} \text{ cm}^2$$

where

P_p = design load, in kN, supported by the pillar as determined from 10.6
σ_p = permissible compressive stress, in N/mm^2

$$= \frac{f_p \sigma_s}{1 + 0{,}0051 \sigma_s k_f \left(\frac{l_{ep}}{r}\right)^2} \text{ N/mm}^2$$

where

f_p = pillar location factor defined in Table 3.10.1
σ_s = specified minimum yield strength of the material, in N/mm^2
k_f = pillar end fixity factor
= 0,25 for full fixed/bracketed
= 0,50 for partially fixed
= 1,0 for free ended
r = least radius of gyration of pillar cross-section, in cm
$= \sqrt{\frac{I_p}{A_p}}$ cm
I_p = least moment of inertia of cross-section of pillar or stiffener/plate combination, in cm^4
l_{ep} = effective span of pillar, in metres, or bulkhead as defined in 10.2.

Part 6, Chapter 5

Special Features

CORRIGENDA

Section 3

Vehicle decks

3.3 Deck plating

3.3.1 The thickness, t_p, of vehicle deck plating is to be taken as not less than:

$$\cancel{t_p = \frac{\alpha s}{1000 \quad k_s}} \text{ mm}$$

$$t_p = \frac{\alpha s}{1000 \sqrt{k_s}} \text{ mm}$$

where

P_1 = corrected patch load, in tonnes, obtained from Table 5.3.1

α = thickness coefficient obtained from Fig. 5.3.1

s = secondary stiffener spacing, in mm

β_p = tyre print coefficient used in Fig. 5.3.1

$= \log_{10}\left(\frac{P_1 k_s^2}{s^2} \times 10^7\right)$

s and k_s are as defined in 1.2.

Section 6

Helicopter landing areas

6.3 Landing area plating

6.3.1 The deck plate thickness, t_p, within the landing area is to be not less than:

$$\cancel{t_p = \frac{\alpha s}{1000 \quad k_s}}$$

$$t_p = \frac{\alpha s}{1000 \sqrt{k_s}}$$

α = thickness coefficient obtained from Fig. 5.3.1

β_p = tyre print coefficient used in Fig. 5.3.1

$= \log_{10}\left(\frac{P_1 k_s^2}{s^2} \times 10^7\right)$

where

s and k_s are defined in 1.2.

Part 6, Chapter 6

Hull Girder Strength

CORRIGENDUM

Section 2

Hull girder strength for mono-hull craft

2.2 Bending strength

2.2.3 The longitudinal strength of craft with $\frac{V}{\sqrt{L_{WL}}} \geq 3{,}0$ is to satisfy both the following criteria:

$$\sigma_k + \sigma_l + \sigma_t < 1{,}2\sigma_P \text{ and}$$

$$\sigma_d < \sigma_P$$

where

σ_P = maximum permissible hull vertical bending stress, in N/mm^2 and is not to be taken greater than that determined from 2.2.2

= ~~$f_{\sigma gH}, \sigma_s$~~ $f_{\sigma gH}\ \sigma_s$ or the value determined from 2.2.2, whichever is the lesser

$f_{\sigma gH}$ = limiting hull bending stress coefficient taken from Table 7.3.2 in Chapter 7

L_{WL} is as defined in Pt 3, Ch 1,6.2.5

σ_k, σ_l, σ_t and σ_d are given in Table 6.2.1

σ_s is as defined in 1.2.1.

Part 6, Chapter 7

Failure Modes Control

CORRIGENDUM

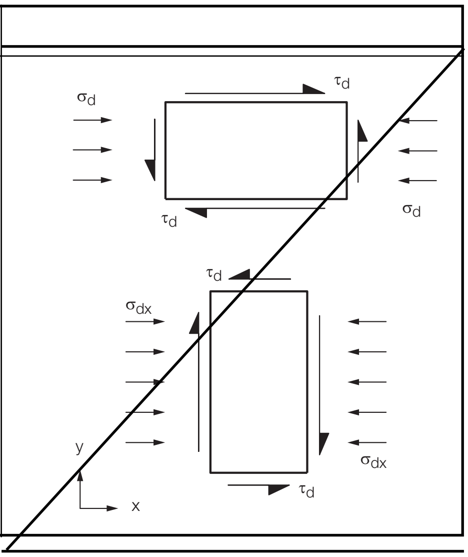
■ *Section 4*

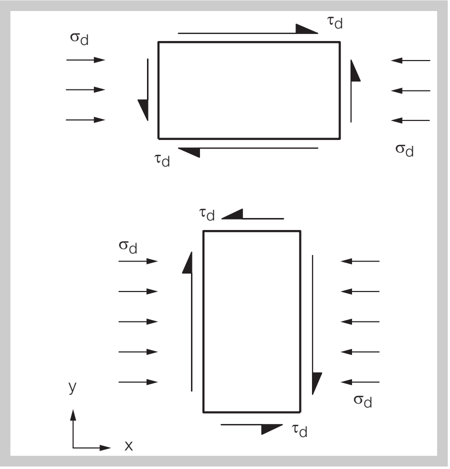
Buckling control

4.3 Plate panel buckling requirements

(*Part only shown*)

Table 7.4.2 Plate panel buckling requirements

	Stress field	Buckling interaction formula	
(d)	uni-axial compressive loads plus shear load	for $A_R > 1$ $\left(\frac{\sigma_d}{\sigma_c}\right)+\left(\frac{\tau_d}{\tau_c}\right)^2 \le 1$ for $A_R \le 1$ $\left(\frac{1+0,6A_R}{1,6}\right)\left(\frac{\sigma_d}{\sigma_c}\right)+\left(\frac{\tau_d}{\tau_c}\right)^2 \le 1$	

	Stress field	Buckling interaction formula	
(d)	uni-axial compressive loads plus shear load	for $A_R > 1$ $\left(\frac{\sigma_d}{\sigma_c}\right)+\left(\frac{\tau_d}{\tau_c}\right)^2 \le 1$ for $A_R \le 1$ $\left(\frac{1+0,6A_R}{1,6}\right)\left(\frac{\sigma_d}{\sigma_c}\right)+\left(\frac{\tau_d}{\tau_c}\right)^2 \le 1$	

Part 7, Chapter 2

Construction Procedures

CORRIGENDA

■ *Section 3*
Procedures for welded construction

3.7 Testing

Table 2.3.1 Non-destructive examinations of welds

Volumetric non-destructive examinations – Recommended extent of testing, *see* 3.7.3		
Item	Location	Checkpoints, *see* Note 1
Intersections of butts and seams of fabrication and section welds	Throughout: • hull envelope • longitudinal and transverse bulkheads • inner bottom and hopper bottom	The summation of checkpoint lengths (*see* Note 2) examined at intersections is to be *L*, where *L* is the overall length of the ship in metres
Butt welds in plating	Throughout	1 m in 25 m, *see* Note 3
Seam welds in plating	Throughout	1 m in 100 m
Butts in longitudinals	Hull envelope within 0,4*L* amidships	1 in 10 welds
	Hull envelope outside 0,4*L* amidships	1 in 20 welds
Bilge keel butts	Throughout	1 in 10 welds
Structural items when made with full penetration welding as follows: • connection of stool and bulkhead to lower stool shelf plating • vertical corrugations to an inner bottom • hopper knuckles • sheerstrake to deck stringer • hatchways coaming to deck	Throughout	1 m in 20 m

NOTES
1. The length of each checkpoint is to be between 0,3 m and 0,5 m.
2. For checkpoints at intersections the measured dimension of length is to be in the direction of the butt weld.
3. Checkpoints in butt welds and seam welds are in addition to those at intersections.
4. Agreed locations are not to be indicated on the blocks prior to the welding taking place, nor is any special treatment to be given at these locations.
5. Particular attention is to be given to repair rates in longitudinal butts. Additional welds are to be tested in the event that defects, such as lack of fusion or incomplete penetrations, are repeatedly observed.

■ *Section 4*
Joints and connections

4.5 Fillet welds

(*Part only shown*)

Table 2.4.3 Weld factors (*conclusion*)

Item	Weld Factor	Remarks
(9) Miscellaneous fittings and equipment:		
(p) Fabricated anchors	full penetration	~~full penetration~~

Part 9, Chapter 2

Surveys During Construction, Installation and Sea Trials

CORRIGENDA

■ *Section 2*
Diesel engines

2.2 Hydraulic testing

Table 2.2.1 Test pressures

Item	Test pressure
Fuel injection system: Pump body, pressure side Valve Pipe	The lesser of 1,5p or p + 295 bar
Cylinder cover, cooling space Cylinder liner, over the whole length of cooling space Piston crown, cooling space (where piston rod seals cooling space, test after assembly)	7,0 bar
Cylinder jacket, cooling space Exhaust valve, cooling space ~~Turbo-charger~~ Turbocharger, cooling space Exhaust pipe, cooling space Coolers, each side Engine driven pumps (oil, water, fuel, bilge)	The greater of 4,0 bar or 1,5p
Air compressor, including cylinders, covers, intercoolers and aftercoolers	Air side: 1,5p Water side: The greater of 4,0 bar or 1,5p
Scavenge pump cylinder	4,0 bar

NOTES
1. p is the maximum working pressure, in bar, in the item concerned.
2. Fuel pumps of the jerk or timed pump system are not included.
3. ~~Turbo-charger~~ Turbocharger air coolers need only be tested on the water side.
4. For forged steel cylinder covers alternative testing methods will be specially considered.

■ *Section 3*
~~Turbo-chargers~~ Turbochargers

3.1 Type testing

3.1.1 A type test is to consist of a hot gas running test of at least one hour duration at the maximum permissible speed and maximum permissible temperature. Following the test the ~~turbo-charger~~ turbocharger is to be completely dismantled for examination of all parts.

3.4 Mechanical running tests

3.4.1 ~~Turbo-chargers~~ Turbochargers are to be given a mechanical running test of 20 minutes duration at the maximum permissible speed.

3.4.2 Upon application, with details of an historical audit covering previous testing of ~~turbo-chargers~~ turbochargers manufactured under an approved quality assurance scheme, consideration will be given to confining the test to a representative sample of ~~turbo-chargers~~ turbochargers.

Part 10, Chapter 1

Diesel Engines

CORRIGENDA

■ *Section 2*
Particulars to be submitted

2.1 Plans and information

2.1.2 The following information and calculations are to be submitted for information:

- Power/speed operational envelope.
- Calculations and information for short term high power operation where applicable.
- Longitudinal and transverse cross-section.
- Cast bedplate, thrust bearing bedplate, crankcase and frames.
- Cylinder head assembly.
- Cylinder liner.
- Piston assembly.
- Tie rod.
- Connecting rod, piston rod, and crosshead assemblies.
- Camshaft drive and camshaft general arrangement.
- Shielding and insulation of exhaust pipes.
- Operation and maintenance manuals.
- Vibration dampers/detuners and moment compensators.
- Details of turbochargers.
- Cross-sectional plans of the assembled ~~turbo-charger~~ turbocharger with main dimensions.
- Fully dimensioned plans of the rotor.
- Material particulars with details of welding and surface treatments.
- ~~Turbo-charger~~ Turbocharger operating and test data.
- Manufacturer’s burst test assessment.
- Material specifications covering the listed components together with details of any surface treatments, non-destructive testing and hydraulic tests.
- Arrangement of interior lighting, where provided.
- Engine Type test programme, where required including proposals for short term high power operation.
- Alternative proposals for hydraulic tests where design features are such that modifications to the test requirements are necessary.
- Thrust bearing assembly (if integral with engine and not integrated in the bedplate).
- Counterweights, where attached to crank-throw, including fastening.
- Main engine holding down arrangement (metal chocks).

■ *Section 3*
Materials

3.1 Materials test and inspections

(*Part only shown*)

Table 1.3.1 Material testing requirements

Component	Material tests	Non-destructive tests	
		Magnetic particle or Liquid penetrant	Ultrasonic
~~Turbo-charger~~ Turbocharger, shaft and rotor	above 300 mm bore	—	—

■ *Section 9*
Control and monitoring

9.7 Diesel engines for propulsion purposes

(*Part only shown*)

Table 1.9.1 Oil engines for propulsion purposes alarms and safeguards *(conclusion)*

Item	Alarm	Note
~~Turbo-charger~~ Turbocharger exhaust gas outlet temperature*	High	—
~~Turbo-charger~~ Turbocharger lubricating oil inlet pressure	Low	If system not integral with ~~turbo-charger~~ turbocharger
~~Turbo-charger~~ Turbocharger lubricating oil outlet temperature	High	Each bearing, if system not integral with ~~turbo-charger~~ turbocharger. *See* Note 4
Starting air pressure*	Low	Before engine manoeuvring valve
Overspeed*	High	Automatic shutdown of engine, *see also* 9.4. Details of alternative proposals in accordance with the manufacturer's instructions may be submitted for consideration
Automatic start of engine	Failure	*See* 9.7.6
Electrical starting battery charge level	Low	—

NOTES
1. Where 'per cylinder' appears in this Table, suitable alarms may be situated on manifold outlets for medium and high speed engines.
2. For engines and gearing of 1500 kW or less, only the items marked* are required.
3. For service craft with engines of 500 kW or less, only the items marked ++ are required.
4. Where the outlet temperature for each bearing cannot be measured due to the design, details of alternative proposals in accordance with the turbocharger manufacturer's instructions may be submitted for consideration.

■ *Section 12*
Mass produced ~~turbo-chargers~~ turbochargers

12.2 Procedure for approval of mass produced ~~turbo-chargers~~ turbochargers

12.2.1 The procedure outlined in 12.2.2 to 12.2.5 applies to the inspection and certification of mass produced ~~turbo-chargers~~ turbochargers when a simplified method of inspection has been requested by the manufacturers.

12.2.4 A Type test, *see* Pt 9, Ch 2,3.1, is to be carried out on a standard unit taken from the assembly line and is to be witnessed by the Surveyor. The performance data which may have to be verified are to be made available at the time of the type test. For manufacturers who have facilities for testing the ~~turbo-charger~~ turbocharger unit on an engine for which the ~~turbo-charger~~ turbocharger is intended, substitution of the hot running test by a test run of one hour's duration at overload (110 per cent of the rated output) may be considered.

12.2.5 LR reserves the right to limit the duration of validity of approval of a mass produced ~~turbo-charger~~ turbocharger. LR is to be informed, without delay, of any change in the design of the ~~turbo-charger~~ turbocharger, in the manufacturing or control processes, in the selection of materials or in the list of subcontractors for main parts.

12.3 Continuous inspection of individual units

12.3.3 Rotating parts of the ~~turbo-charger~~ turbocharger blower are to be marked for easy identification with the appropriate certificate.

12.3.7 A mechanical running test, *see* Pt 9, Ch 2,3.4, is to be carried out. The duration of the running test may be reduced to 10 minutes provided that the manufacturer is able to verify the distribution of defects established during the running tests on the basis of a sufficient number of tested ~~turbo-chargers~~ turbochargers. For manufacturers who have facilities in their works for testing the ~~turbo-chargers~~ turbochargers on an engine for which the ~~turbo-chargers~~ turbochargers are intended, the bench test may be replaced by a test run of 20 minutes at overload (110 per cent of the rated output) on this engine.

12.4 Compliance and certificate

12.4.1 For every ~~turbo-charger~~ turbocharger unit liable to be installed on an engine intended for a ship classed by LR, the manufacturer is to supply a statement certifying that the ~~turbo-charger~~ turbocharger is identical with one that underwent the tests specified in 12.2.4 and that prescribed tests were carried out. Results of these tests are also to be stated. This statement is to be made on a form agreed with LR and a copy is to be sent to LR. Each statement must have a number which is to appear on the ~~turbo-charger~~ turbocharger.

■ *Section 14*

Programme for trials of diesel engines to assess operational capability

14.1 Works trials (acceptance test)

Table 1.14.1 Scope of works trials for diesel engines

Main engines driving propellers and waterjets		
Trial condition	Duration	Note
100 per cent power (rated power) at rated engine speed, *R*	≥ 60 minutes	After having reached steady conditions
110 per cent power at engine speed corresponding to 1,032**R*	30–45 minutes	After having reached steady conditions (1)
90 per cent (or maximum continuous power), 75 per cent, 50 per cent and 25 per cent	—	Powers in accordance with the nominal propeller curve
Starting and reversing manoeuvres	—	—
Testing of governor and independent overspeed protective device	—	*See* 9.2
~~Shut-down~~ Shutdown device	—	*See* 9.4
Engines driving generators		
Trial condition	Duration	Note
100 per cent power (rated power) at rated engine speed, *R*	≥ 50 minutes	After having reached steady conditions (2)
110 per cent power	15 minutes	After having reached steady conditions (2) (3)
75 per cent, 50 per cent and 25 per cent power and idle run	—	(2)
Start-up tests	—	—
Testing of governor and independent overspeed protective device	—	*See* 9.3
~~Shut-down~~ Shutdown device	—	*See* 9.4

NOTES
1. After running on the test bed, the fuel delivery system of main engines is normally to be so adjusted that overload power cannot be given in service.
2. The test is to be performed at rated speed with a constant governor setting.
3. After running on the test bed, the fuel delivery system of diesel engines driving generators must be adjusted such that overload (110 per cent) power can be given in service after installation on board, so that the governing characteristics including the activation of generator protective devices can be fulfilled at all times.

Part 16, Chapter 1

Control Engineering Systems

CORRIGENDUM

■ *Section 3*

Ergonomics of control stations

3.3 Physical environment

3.3.2 In general, noise levels are to comply with ~~IMO Res. A.468(XII), Code on Noise Levels on Board Ships~~ IMO Res. MSC.337(91) *Code on Noise Levels On Board Ships*, and are to take into account IMO Res. A.343(IX), *Recommendation on Methods of Measuring Noise; Levels at Listening Posts*.

Part 16, Chapter 2

Electrical Engineering

CORRIGENDUM

■ *Section 17*

Fire safety systems

17.3 Fixed water-based local application fire-fighting systems

17.3.10 The evidence required by 17.3.9 is to demonstrate the safe and effective operation of the overall arrangements in the event of system operation. This evidence is to demonstrate that exposure to system spray and/or water:

- cannot result in loss of essential services (e.g., unintended activation of automatic machinery ~~shut-down~~ shutdown);
- cannot result in loss of availability of emergency services;
- will not affect the continued safe and effective operation of electrical and electronic equipment required to operate during the required period of system operation;
- does not present additional electrical or fire hazards; and
- would require only identified readily replaceable components to be repaired or replaced.

© Lloyd’s Register Group Limited 2014
Published by Lloyd’s Register
Registered office
71 Fenchurch Street, London, EC3M 4BS
United Kingdom

Lloyd’s Register is a trading name of Lloyd’s Register Group Limited and its subsidiaries. For further details please see http://www.lr.org/entities

Lloyd's Register Group Limited, its affiliates and subsidiaries and their respective officers, employees or agents are, individually and collectively, referred to in this clause as ‘Lloyd's Register’. Lloyd's Register assumes no responsibility and shall not be liable to any person for any loss, damage or expense caused by reliance on the information or advice in this document or howsoever provided, unless that person has signed a contract with the relevant Lloyd's Register entity for the provision of this information or advice and in that case any responsibility or liability is exclusively on the terms and conditions set out in that contract.